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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,209	09/25/2006	Gilbert Rancoule	1468 (06-62)	7357
25105 7590 11/29/2007 VESUVIUS CRUCIBLE COMPANY 27 NOBLESTOWN RD CARNEGIE, PA 15106-1632				
EXAMINER JOHNSON, KEVIN M				
ART UNIT		PAPER NUMBER		
4116				
MAIL DATE		DELIVERY MODE		
11/29/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/594,209

Applicant(s)

RANCOULE ET AL.

Examiner

Kevin M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date 9/25/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status

1. Claims 1-7 are cancelled. Claims 8-20 are pending and presented for examination.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 9/25/2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The application fails to adequately describe a

method of cracking the impregnated carbonaceous material by a heating process as described in the claim, the specification only mentions a cracking process that entails pressurization (p3, lines 35-36) and fails to describe a method of achieving cracking through the use of heat.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 8, 10-12, 14-15 and 17-18 are rejected under 35 U.S.C. 102(b) as being clearly by Cope et al. (US 3429486).

Claims 8 and 10-12 are drawn to an article comprising vitreous silica impregnated with a carbonaceous material. The article comprises 75-96 wt% of vitreous silica, from 2-23 wt% of a chemical binder and 2-4 wt% water. The chemical binder is selected from the group consisting of calcium aluminate, calcium silicate, polyalkoxysiloxanes, colloidal silica, zirconium acetate, magnesium acetate, magnesium oxide and mixtures thereof. The article is at least 60 wt% amorphous silica and is sintered.

Cope teaches an article consisting of silica that is at least 85% amorphous, contains up to 3% other oxides including CaO, FeO, MgO, Na₂O and K₂O (column 2,

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lines 1-3), contains 4% water (column 2, lines 48-49) and is impregnated with tar (column 2, lines 62-63).

Claims 14-15 and 17-18 are drawn to a method of producing an article comprising vitreous silica impregnated with a carbonaceous material. A heating process facilitates the impregnation of the material, and a cracking process that also occurs by heating follows the impregnation.

Cope teaches a method of producing an article comprising vitreous silica impregnated with a carbonaceous material, where heating the material to 400°F facilitates the impregnation (column 2, lines 64-65). The material is then subsequently baked to cokify the impregnated tar.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 9, 13, 16 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cope. . (US 3429486).

The claims are drawn to a refractory article as discussed above with the further limitation of containing 1-6 wt% of carbonaceous material and more than 90 wt% amorphous silica, and the formation of said article where the impregnation and cracking steps are conducted under pressure.

Cope fails to teach a composition of 1-6 wt% carbonaceous material and more than 90 wt% amorphous silica. Elevated pressure is also not used in the production process.

It would have been obvious to one skilled in the art at the time of the invention to arrive at these values through the process of routine optimization of the article. Cope teaches that it is advantageous to have an amorphous silica content greater than 85%; therefore one would seek to raise amorphous silica levels to greater percentages to ensure the maximum performance of the product. Likewise, a carbonaceous content of

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1-6 wt% would be expected by one skilled in the art for the process described by Cope based upon the methods of impregnation used. It also would have been obvious to carry out the impregnation step at elevated pressure, as it is well known in the art that increased pressure aids impregnation and infiltration processes. It would have also been obvious to carry out the cracking process at an elevated pressure, as the previous heating step was carried out at elevated pressure and this would increase the efficiency of the manufacturing process.

Conclusion

12. All claims are rejected; no claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Johnson whose telephone number is 571-270-3584. The examiner can normally be reached on Monday-Friday 7:30 AM to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on 571-272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KMJ

/Vickie Kim/
Supervisory Patent Examiner, Art Unit 4116